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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/765,270

01/26/2004

Donald W. Sonntag

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24264

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02/06/2006

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EXAMINER

GARBER, CHARLES D

ART UNIT

PAPER NUMBER

2856

DATE MAILED: 02/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/765,270	<b>Applicant(s)</b> SONNTAG ET AL.	
	<b>Examiner</b> Charles D. Garber	<b>Art Unit</b> 2856	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 January 2006.
- 2a) ☒ This action is FINAL.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3, 5-11, 13-20 and 22-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5 and 45-47 is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-11, 13-20, 22-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

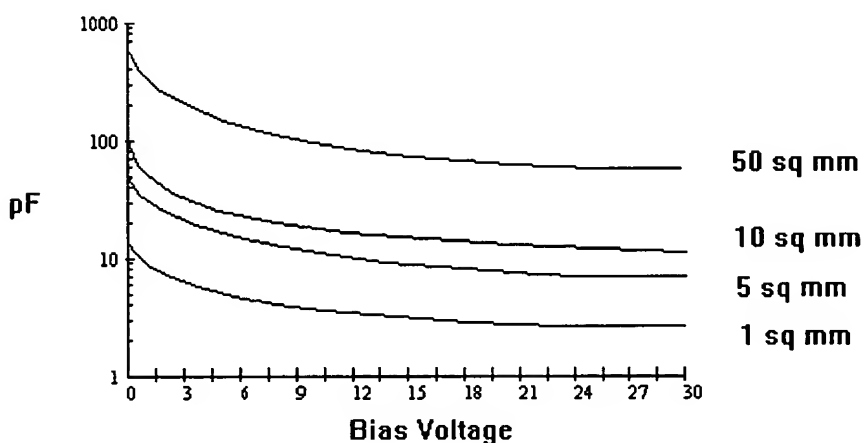
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|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Response to Arguments*

Applicant's arguments filed 01/09/2006 have been fully considered but they are not persuasive.

Applicant argues the plurality of photodiodes 365 does not have a vertical field of view and are not optical devices. Examiner maintains a physical photodiode will have a photosensitive portion that has a determined width and height defining an "active area" of the sensor. Indeed, a diode PN junction capacitance is generally a function of the resistivity of silicon used and active area size. The relationship between junction capacitance, bias voltage and area may for example be shown in the graph below.



Though the field of view may be small and may not be able to discriminate features or light intensity variations in the vertical direction, Examiner maintains any photodiode will have a sensitive area definable in terms of width and height that will react to impinging light. Furthermore, the Gates reference laser is recited to be a helium-neon (HeNe) laser, which produces visible light. HeNe lasers are known to

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output a single wavelength and it is most often red at 632.8 nm but may even be green. Visible light implies optical quality. Applicant also argues the system of Gates has no depth of field. Depth of field is generally the range of distances of the object in front of an image-forming device (as a camera lens) measured along the axis of the device throughout which the image has acceptable sharpness. While the horizontal array of photodiodes disclosed by Gates may not be particularly sharp compared to other image forming devices, the array nonetheless provides some crude depth of field able to distinguish the leak sources transversely.

Applicant argues against the combination with Kline-Schoder because Kline Schoder requires a sight tube to confine the bubbles. Applicant argues "to combine the system with Gates would require some structure wherein any bubbles in the submersion tank would have to be collected and channeled through some type of capillary tube for observation". Examiner considers Gates items 239 or 357 already define such structures.

Applicant argues against the combination with Carleton because Carleton teaches only having a human observer subjectively discriminate bubbles of a selected size whereas the instant invention is automatic. Examiner considers Gates inherently provides for discrimination of bubbles of a certain size based on the trigger value inherent in the multivibrator 72. Examiner does not believe Carleton need be an automated system to teach the advantage of selecting a discrimination size when Gates already inherently includes a discrimination size based on inherent characteristics of the multivibrator.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 2, 6-9, 13, 14, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gates (US Patent 5,263,361) in view of Carleton (US Patent 3,592,047) and Gundal et al. (US Patent 3,550,432).

Regarding claim 1, Gates discloses an apparatus for leak testing a fluid containing chamber including a tank 312 shown in figure 10 as being adapted to hold a liquid bath such that said liquid bath has an upper surface when the tank is in a filled state. There is an observation region shown above the test article.

Belt 369 is a conveyor assembly including an advance portion operative to move in a longitudinal direction from an through an intermediate location below the liquid surface at a depth such that an article supported thereon is submerged in a submerged

state wherein it is beneath the upper surface of the liquid bath as it moves past the observation region when the tank is in the filled state as shown in figures 10 and 11.

A drive operative to advance said advance portion from the upstream location to the downstream location is considered inherent. In order for the conveyor to convey it must be driven to do so.

Laser 359 is a light source operative to illuminate liquid located in the observation region when said tank is in the filled state; and

Photosensor 365 is at least one optical detector disposed at the observation region and operative to monitor a monitored volume of liquid in a view field that has a transverse view depth of field along a view line that extends substantially across said tank in a direction that is transverse to the longitudinal direction and in the observation region, said optical detector operative to generate a leak signal indicating a presence of bubbles in the monitored volume of liquid caused by gas escaping from a faulty article (column 9 line 28 to column 10 line 38). Examiner considers the photo sensor inherently has a horizontal view width and a vertical view height.

Gates does not expressly recite detecting bubbles of a selected bubble size. Carleton teaches distinguishing only bubbles over a certain minimum size so that a leak may be distinguished from very small bubble that are produced from the vessels normal acceptable porosity.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to detect bubble over a selected bubble size so that leaks may be detected in a container that has some normal porosity such as a crucible.

Gates does not expressly recite an upstream location above the upper surface of the liquid to a downstream location above the upper surface of the liquid for the conveyor.

Gundal teaches entrance and output sections 52, 64 for a conveyor. They are shown in figure 2 to be out of the water upstream and downstream of a submerged test section 58.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide entrance and output sections for a conveyor that are out of the water upstream and downstream of a submerged test section in order to provide for adding a retrieving objects to be tested without getting wet.

As for claim 2, Gundal further teaches a tank 10 which is elongated and includes an elongated bottom wall, an upstream end wall, a downstream end wall and first and second elongated sidewalls in spaced-apart, opposed relation to one another and extending between said upstream and downstream end walls thereby to define the interior thereof.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the wall in order to contain the liquid in an elongated path to allow the vessels to be submerged long enough to emit bubbles if leaky.

Gates further discloses the tank including a substantially transparent window 367 or panel in an elongated sidewall located at the observation region.

As for claim 6, the Gates conveyor assembly has an article support side (top as shown) adapted to support articles thereon.

As for claim 7, 9, Gates does not expressly teach the conveyor assembly includes an endless conveyor belt defining having the advance portion and having a return portion, said advance and return portions extending between an upstream conveyor terminus and a downstream conveyor terminus, said return portion being located exteriorly of said tank. However, Gundal further teaches the entrance, test, and output portions of the conveyor extending outside and returning externally in an endless loop outside the tank. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an endless loop that returns outside the tank so the drive portions may be located out the liquid which may not be suitable for electrical drive components.

As for claim 8, Examiner takes Official Notice that it is widely known to construct conveyor belt of stainless steel so they may not corrode upon exposure to moisture.

As for claim 13, Examiner takes Official Notice that a light source including fluorescent lights is widely known. Fluorescent lights are advantageously readily available, long lasting, affordable.

As for claims 14 and 22, Gates discloses "increasing the number of photocells, the corresponding area of the component being tested by each detector is reduced, thereby increasing the accuracy of leak localization." Associated with the photocells are multiple counters or a computer to process the data. The array of photocells with circuitry for localizing the leak is considered equivalent to an imaging processor.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gates (US Patent 5,263,361) as modified by Carleton (US Patent 3,592,047) and Gundal et al.



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(US Patent 3,550,432) and applied to claim 2 above and further in view of Grenfell (US Patent 5,369,983) teaches

The reference lack the observation station includes a background associated with the second sidewall in opposed relation to said transparent panel, said background including a light absorbing material.

Grenfell teaches the formation and size of bubbles are monitored against a lighted, flat black background. If no bubbles form within a predetermined period , the package is considered to have no gross leaks.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a light absorbing background in order to create greater contrast and detectibility for the bubbles.

Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gates (US Patent 5,263,361) as modified by Carleton (US Patent 3,592,047) and Gundal et al. (US Patent 3,550,432) and applied to claim 1 above and further in view of Davis (US Patent 3,270,552)

The references lack a longitudinal magnetic hold down under the conveyor belt for magnetically retaining the article on the conveyor belt while the article being tested is submerged.

Davis teaches longitudinal magnetic track 70 under belt 18 to hold ferromagnetic articles under the bath.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a magnetic track in order to hold the article under the

bath without the need of a complicated mechanism (such as Gate's clamp 371 in figure 11) to clamp the outside of the article which may interfere with a leak path.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gates (US Patent 5,263,361) as modified by Carleton (US Patent 3,592,047) and Gundal et al. (US Patent 3,550,432) and applied to claim 1 above and further in view of Kline-Schoder et al. (US Patent 6,629,449).

Regarding claim 15, Carleton advantageously taught selected bubble size to be detected and further teaches it is well within the skill of the art to determine suitable observation criteria such as different bubble diameters (column 2 lines 33-38) but the references do not teach adjusting the optical detector to do so.

Kline-Schoder teaches "detecting, distinguishing, and counting ...bubbles over a selectable range of bubble sizes of interest" using a CCD video camera and computer (abstract, figure 6).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use an adjustable device when suitable observation criteria are determined in order to be able to quickly and automatically effect the desired observation criteria.

Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gates (US Patent 5,263,361) as modified by Carleton (US Patent 3,592,047) and Gundal et al. (US Patent 3,550,432) and applied to claim 1 above and further in view of Fawcett, Jr. et al. (US Patent 5,448,919).

The references do not expressly teach a light hood disposed proximately to the observation region and operative to mask at least some ambient light against entering the observation region, wherein said light hood includes a housing extending longitudinally of and above said tank.

Fawcett, Jr. teaches filtering means built into the housing cover of a device using optical sensors to detect the movement of bubbles in a flow. The filtering means blocks an infrared portion of the ambient light from entering the flow cell to improve detection of the optical sensors (abstract and brief summary of the invention). The figures show the housing extending laterally and longitudinally over the region 36 that may be considered a tank.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a housing over the tank that blocks at least a portion of the ambient light in order to improve optical detection of the bubbles.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gates (US Patent 5,263,361) as modified by Carleton (US Patent 3,592,047) and Gundal et al. (US Patent 3,550,432) and applied to claim 1 above and further in view of Bade et al. (US Patent 3,950,982).

The references do not expressly teach a blow-off assembly disposed proximately to said conveyor assembly at a downstream location and operative to produce an air flow whereby at least some of the liquid residing on said articles after said articles are removed from the submerged state is removed by the air flow.

Bade teaches air blast 38 as part of a "means to dry" articles exiting a leak test bath on a conveyor (see figure 2, column 4 line 58 to column 5 line 21).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to dry the container articles exiting the bath to remove any contamination before filling.

Claims 20, 23, 27, 28 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gates (US Patent 5,263,361) as modified by Carleton (US Patent 3,592,047) and Gundal et al. (US Patent 3,550,432) and applied to claim 1 above and further in view of Cohen et al. (US Patent 5,010,761)

Gates discloses "an alarm relay will be activated thereby indicating a leak in the component being tested" which is an electronic controls operative in response the leak signal to generate an alarm indicating detection of a faulty article. But Gates does not expressly teach the control also disabling the conveyor assembly thereby to stop advancement of said advance portion.

Cohen teaches an article that "failed the leak detection test, the output conveyor 112 will move the wheel to the reject conveyor 114 at which time the output conveyor 112 will stop. Thereafter, the reject conveyor 114 will be operated to deviate the direction of the rejected wheel to another manufacturing operation as will be described hereinafter"

It would have been obvious to one having ordinary skill in the art at the time the invention was made to stop the conveyor in order to remove the faulty article to a

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different route for another manufacturing operation that may for example correct the fault.

As for claim 27, 28, Gates does not expressly teach the conveyor assembly includes an endless conveyor belt defining having the advance portion and having a return portion, said advance and return portions extending between an upstream conveyor terminus and a downstream conveyor terminus, said return portion being located exteriorly of said tank. However, Gundal further teaches the entrance, test, and output portions of the conveyor extending outside and returning externally in an endless loop outside the tank. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an endless loop that returns outside the tank so the drive portions may be located out the liquid which may not be suitable for electrical drive components.

As for claim 31, Gates discloses "increasing the number of photocells, the corresponding area of the component being tested by each detector is reduced, thereby increasing the accuracy of leak localization." Associated with the photocells are multiple counters or a computer to process the data. The array of photocells with circuitry for localizing the leak is considered equivalent to an imaging processor.

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gates (US Patent 5,263,361) as modified by Carleton (US Patent 3,592,047), Gundal et al. (US Patent 3,550,432) and Cohen et al. (US Patent 5,010,761) and applied to claim 23 above and further in view of Grenfell (US Patent 5,369,983)

The references lack the observation station including a background associated with the second sidewall in opposed relation to said transparent panel, said background including a light absorbing material.

Grenfell teaches the formation and size of bubbles are monitored against a lighted, flat black background. If no bubbles form within a predetermined period, the package is considered to have no gross leaks.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a light absorbing background in order to create greater contrast and detectibility for the bubbles.

Claims 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gates (US Patent 5,263,361) as modified by Carleton (US Patent 3,592,047), Gundal et al. (US Patent 3,550,432) and Cohen et al. (US Patent 5,010,761) and applied to claim 23 above and further in view of Davis (US Patent 3,270,552)

The references lack a longitudinal magnetic hold down under the conveyor belt for magnetically retaining the article on the conveyor belt while the article being tested is submerged.

Davis teaches longitudinal magnetic track 70 under belt 18 to hold ferromagnetic articles under the bath.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a magnetic track in order to hold the article under the bath without the need of a complicated mechanism (such as Gate's clamp 371 in figure 11) to clamp the outside of the article which may interfere with a leak path.

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gates (US Patent 5,263,361) as modified by Carleton (US Patent 3,592,047), Gundal et al. (US Patent 3,550,432) and Cohen et al. (US Patent 5,010,761) and applied to claim 23 above and further in view of Fawcett, Jr. et al. (US Patent 5,448,919).

The references do not expressly teach a light hood disposed proximately to the observation region and operative to mask at least some ambient light against entering the observation region, wherein said light hood includes a housing extending longitudinally of and above said tank.

Fawcett, Jr. teaches filtering means built into the housing cover of a device using optical sensors to detect the movement of bubbles in a flow. The filtering means blocks an infrared portion of the ambient light from entering the flow cell to improve detection of the optical sensors (abstract and brief summary of the invention). The figures show the housing extending laterally and longitudinally over the region 36 that may be considered a tank.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a housing over the tank that blocks at least a portion of the ambient light in order to improve optical detection of the bubbles.

Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gates (US Patent 5,263,361) as modified by Carleton (US Patent 3,592,047), Gundal et al. (US Patent 3,550,432) and Cohen et al. (US Patent 5,010,761) and applied to claim 23 above and further in view of Bade et al. (US Patent 3,950,982).

The reference do not expressly teach a blow-off assembly disposed proximately to said conveyor assembly at a downstream location and operative to produce an air flow whereby at least some of the liquid residing on said articles after said articles are removed from the submerged state is removed by the air flow.

Bade teaches air blast 38 as part of a "means to dry" articles exiting a leak test bath on a conveyor (see figure 2, column 4 line 58 to column 5 line 21).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to dry the container articles exiting the bath to remove any contamination before filling.

Claims 35, 36, 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gates (US Patent 5,263,361) in view of Carleton (US Patent 3,592,047).

Regarding claim 35, Gates discloses an apparatus for leak testing a fluid containing chamber including a tank 312 shown in figure 10 as being adapted to hold a liquid bath such that said liquid bath has an upper surface when the tank is in a filled state. There is an observation region shown above the test article.

Laser 359 is a light source provided to illuminate liquid located in the observation region when said tank is in the filled state; and

Photosensor 365 is at least one optical detector disposed at the observation region provided to monitor a monitored volume of liquid in a view field that has a transverse view depth of field along a view line that extends substantially across said tank in a direction that is transverse to the longitudinal direction and in the observation region, said optical detector operative to generate a leak signal indicating a presence of



bubbles in the monitored volume of liquid caused by gas escaping from a faulty article (column 9 line 28 to column 10 line 38).

Gates discloses "increasing the number of photocells, the corresponding area of the component being tested by each detector is reduced, thereby increasing the accuracy of leak localization." Associated with the photocells are multiple counters or a computer to process the data. The array of photocells with circuitry for localizing the leak is considered equivalent to providing an imaging processor.

Gates does not expressly recite detecting bubbles of a selected bubble size. Carleton teaches distinguishing only bubbles over a certain minimum size so that a leak may be distinguished from very small bubble that are produced from the vessels normal acceptable porosity.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to detect bubble over a selected bubble size so that leaks may be detected in a container that has some normal porosity such as a crucible.

As for claim 36, Belt 369 is a conveyor assembly including an advance portion operative to move in a longitudinal direction from an through an intermediate location below the liquid surface at a depth such that an article supported thereon is submerged in a submerged state wherein it is beneath the upper surface of the liquid bath as it moves past the observation region when the tank is in the filled state as shown in figures 10 and 11.

A drive operative to advance said advance portion from the upstream location to the downstream location is considered inherent. In order for the conveyor to convey it must be driven to do so.

As for claim 44 Gates discloses "increasing the number of photocells, the corresponding area of the component being tested by each detector is reduced, thereby increasing the accuracy of leak localization."

Claims 37, 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gates (US Patent 5,263,361) as modified by Carleton (US Patent 3,592,047) and applied to claim 36 above and further in view of Gundal et al. (US Patent 3,550,432).

Gates does not expressly teach the conveyor assembly includes an endless conveyor belt defining having the advance portion and having a return portion, said advance and return portions extending between an upstream conveyor terminus and a downstream conveyor terminus, said return portion being located exteriorly of said tank.

Gundal teaches the entrance, test, and output portions of a conveyor extending outside and returning externally in an endless loop outside the tank.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an endless loop that returns outside the tank so the drive portions may be located out the liquid which may not be suitable for electrical drive components.

Claims 39, 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gates (US Patent 5,263,361) as modified by Carleton (US Patent 3,592,047) and

Gundal et al. (US Patent 3,550,432) applied to claim 38 above and further in view of Davis (US Patent 3,270,552).

Regarding claim 39, the references do not expressly teach including the step of magnetically retaining the article on the conveyor belt while the article is submerged.

Davis teaches magnetic track 70 under belt 18 to hold ferromagnetic articles under the bath.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a magnetic track in order to hold the article under the bath without the need of a complicated mechanism to clamp the outside of the article which may interfere with a leak path.

As for claim 40, the references do not expressly recite heating the liquid bath thereby either to pressurize the article or to increase pressure in an already pressurized article.

Davis further teaches heating the bath in a leak test of certain articles is a stringent government requirement.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to heat the bath as this is required by government regulation.

Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gates (US Patent 5,263,361) as modified by Carleton (US Patent 3,592,047) and applied to claim 35 above and further in view of Cohen et al. (US Patent 5,010,761)

Gates discloses "an alarm relay will be activated thereby indicating a leak in the component being tested" which is an electronic controls operative in response the leak

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signal to generate an alarm indicating detection of a faulty article. But Gates does not expressly teach the control also disabling the conveyor assembly thereby to stop advancement of said advance portion.

Cohen teaches an article that "failed the leak detection test, the output conveyor 112 will move the wheel to the reject conveyor 114 at which time the output conveyor 112 will stop. Thereafter, the reject conveyor 114 will be operated to deviate the direction of the rejected wheel to another manufacturing operation as will be described hereinafter"

It would have been obvious to one having ordinary skill in the art at the time the invention was made to stop the conveyor in order to remove the faulty article to a different route for another manufacturing operation that may for example correct the fault.

Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gates (US Patent 5,263,361) as modified by Carleton (US Patent 3,592,047) and applied to claim 35 above and further in view of above and further in view of Kline-Schoder et al. (US Patent 6,629,449).

Carleton advantageously taught selected bubble size to be detected and further teaches it is well within the skill of the art to determine suitable observation criteria such as different bubble diameters (column 2 lines 33-38) but the references do not teach adjusting the optical detector to do so.

Kline-Schoder teaches "detecting, distinguishing, and counting ...bubbles over a selectable range of bubble sizes of interest" using a CCD video camera and computer (abstract, figure 6).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use an adjustable device when suitable observation criteria are determined in order to be able to quickly and automatically effect the desired observation criteria.

Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gates (US Patent 5,263,361) as modified by Carleton (US Patent 3,592,047) and Gundal et al. (US Patent 3,550,432) applied to claim 39 above and further in view of above and further in view of Bade et al. (US Patent 3,950,982).

The references do not expressly teach a blow-off assembly disposed proximately to said conveyor assembly at a downstream location and operative to produce an air flow whereby at least some of the liquid residing on said articles after said articles are removed from the submerged state is removed by the air flow.

Bade teaches air blast 38 as part of a "means to dry" articles exiting a leak test bath on a conveyor (see figure 2, column 4 line 58 to column 5 line 21).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to dry the container articles exiting the bath to remove any contamination before filling.

***Allowable Subject Matter***

Claims 5, 45-47 are allowed.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles D. Garber whose telephone number is (571) 272-2194. The examiner can normally be reached on 8:00 a.m. to 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Charles D. Garber  
Primary Examiner  
Art Unit 2856

cdg